UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,915	09/29/2003	Tod Paulus	5797-00300	7351

35690 7590 01/11/2006

MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

EXAMINER	
HAROON, ADEEL	

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/673,915	PAULUS, TOD	
	Examiner	Art Unit	
	Adeel Haroon	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 of copending Application No. 10/675,601. Although the conflicting claims are not identical, they are not patentably distinct from each other because they contain the same patentable subject matter with only obvious type modifications.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Yu et al. (IEEE article provided by examiner).

With respect to claim 1, Yu et al. disclose a receiver circuit in figure 22 with an error detection circuit, LMS algorithm has error detection incorporated in the system, configured to receive a digital signal comprising I and Q components and to detect an error in a complex image correction factor (Page 796, Column 1, lines 1-9). Yu et al. also disclose an error correction circuit, DSP adaptive filtering element, coupled to a error detection circuit and configured to modify the complex image correction factor, W(z), dependent upon said error (Page 796, Column 1, lines 14-32).

With respect to claim 2, Yu et al.'s error detection circuit must be coupled to the error correction circuit in a feedback loop since the image correction factor is dependent on the last value of the output as shown in the equations for the complex image correction factor, which then clearly establish feedback and also iterative relationship (Page 796, Column 1, lines 14-32).

With respect to claim 3, Yu et al. teaches that the error detection and correction circuits are configured to detect and correct the error has been eliminated as shown in figure 18, which is interpreted as a threshold time.

With respect to claim 4, Yu et al. discloses that he digital signal and complex image correction factor are combined in figure 12 with the adders. Yu et al. also teaches using the LMS algorithm, least mean squared, which by definition squares the result/output to for selecting the complex image correction factor. The equations for the complex image correction factors show that they accumulate a scaling factor (Page 796, Column 1, lines 14-32).

With respect to claims 6 and 7, Yu et al.'s equations shows that the scaling factor is programmable with different values during successive iterations(Page 796, Column 1, lines 14-32).

With respect to claim 9, Yu et al. teaches that the digital signal is dependent upon a radio frequency signal input through the analog front end in figure 22. Yu et al. also teaches that the operation of the error detection and correction is dependent on the presence of radio frequency signal in figure 14.

With respect to claim 10, Yu et al. teaches receiving a digital signal with I and Q components, with ΣΔ modulator in figure 22. Yu et al. teaches combining the digital signal with a complex error correction factor with the DSP adaptive filtering element. Yu et al.'s method uses a LMS algorithm, which has error detection incorporated in the system (Page 796, Column 1, lines 1-9). Yu et al. also teaches modifying the complex

image correction factor, W(z), dependent upon said error (Page 796, Column 1, lines 14-32).

With respect to claim 11, Yu et al. discloses that the whole method is done iteratively in steps with the complex image correction factor equations(Page 796, Column 1, lines 14-32).

Yu et al. teaches that the error detection and correction circuits are configured to detect and correct the error has been eliminated as shown in figure 18, which is interpreted as a threshold time.

With respect to claims 13 and 18, Yu et al. discloses that he digital signal and complex image correction factor are combined in figure 12 with the adders. Yu et al. also teaches using the LMS algorithm, least mean squared, which by definition squares the result/output to for selecting the complex image correction factor. The equations for the complex image correction factors show that they accumulate a scaling factor (Page 796, Column 1, lines 14-32).

With respect to claims 6 and 7, Yu et al.'s equations shows that the scaling factor is programmable with different values during successive iterations (Page 796, Column 1, lines 14-32).

With respect to claims 19 and 20, Yu et al. discloses digital signal processor adaptive filtering executing program instructions in figure 22. Yu et al. teaches receiving a digital signal with I and Q components, with $\Sigma\Delta$ modulator in figure 22. Yu et al. teaches combining the digital signal with a complex error correction factor with the DSP adaptive filtering element. Yu et al.'s method uses a LMS algorithm, which has error

detection incorporated in the system (Page 796, Column 1, lines 1-9). Yu et al. also teaches modifying the complex image correction factor, W(z), dependent upon said error (Page 796, Column 1, lines 14-32).

Allowable Subject Matter

5. Claims 5, 8, 16, and 17 would be allowable if the applicant overcomes the double patenting rejections set forth in this Office action and if rewritten to include all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zheng (U.S. 6,892,060) discloses an image correction system using a complex filter. Gu (U.S. 2003/0072393) discloses a quadrature receiver with mismatch and image correction network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adeel Haroon whose telephone number is (571) 272-7405. The examiner can normally be reached on Monday thru Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AH
1/6/05

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600